	Application No.	Applicant(s)
Notice of Allowability	10/004,311	WHITE ET AL.
	Examiner	**Art Unit**	
	Greg Bengzon	2144	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *02/23/2006*.

2. ☒ The allowed claim(s) is/are *1,4-7 and 13-24, renumbered 1-17 respectively*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All   b) ☐ Some*   c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
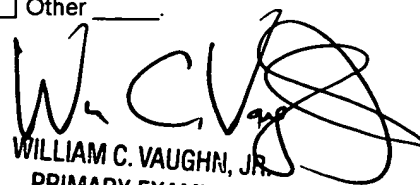   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
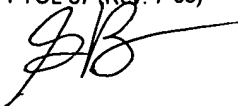**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .
    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of
    Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)
1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____ .

WILLIAM C. VAUGHN, JR.
PRIMARY EXAMINER

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes

and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be

submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given over a series of

telephone interviews and email notification with Atty. Richard Himelhoch, Reg. No.

35,544 , said interviews occurring between June 2, 2006 and June 8, 2006. The

authorization to amend Claim 7 to read 'computer-readable storage medium' was given

on June 8, 2006.

The application has been amended as follows:

Listing of Claims:

1. (Currently Amended) A method of assigning a network identifier to a client node, the
client node having a memory and being operably connected to a server wherein the
server assigns the network identifier to the client node, the method comprising the steps
of:

        providing a default identifier, the default identifier being assigned to the client
node;

        broadcasting a request for assignment of a network identifier from the server, the
request being broadcast by the client node;

        determining a location of the client node, the location being identified with respect
to the server; the determining a location of the client node including:

                receiving a request for the network identifier from the client node,

transmitting a toggle signal from the server, the toggle signal having an amount of state transitions,

storing the amount of state transitions in the memory of the client node,

identifying the client node having the default identifier and the amount of state transitions <u>by transmitting a request by the server to receive the amount of state transitions stored in the memory of the client node and, comparing the amount of state transitions stored in the memory of the client node with the toggle signal wherein the network identifier is transmitted to the client node in response to the comparison</u>; and,

assigning the network identifier to the client node by the server to the client node in response to the determined location of the client node.

2. – 3. (Canceled)

4. (Currently Amended) A method of assigning a network identifier to each of a plurality of client nodes operably connected to a network, each client node being operably connected to a network server wherein the network server assigns a network identifier to each client node, the method comprising the steps of:

providing a default network identifier, each of the plurality of client nodes being assigned the default network identifier;

requesting a network identifier from the network server, the request being made by the client node having the default identifier;

transmitting a toggle signal having a number of state transmissions by the network server;

storing the number of state transitions by the client node having the default identifier <u>in a memory of the client node</u>;

determining by the network server the client node having the default identifier and being nearest to the network server based on the stored state transitions in the client node <u>by transmitting a request by the server to receive the amount of state transitions stored in the memory of the client node and, comparing the amount of state</u>

transitions stored in the memory of the client node with the toggle signal wherein the network identifier is transmitted to the client node in response to the comparison; and,

assigning the network identifier by the network server to the identified client node, wherein additional, unique , network identifiers are subsequently assigned by the network server to each remaining client node having a default identifier and being nearest to the server.

5. (Original) The method of claim 4 further comprising:

inserting an additional client node into the network; and,

identifying the additional client node for assigning the permanent network identifier.

6. (Original) The method of claim 5 further comprising:

optimizing the assigning of a network identifier, the optimizing comprising the steps of:

monitoring a level of network interaction of each client node;

selecting a client node having a lowest level of network interaction; and,

assigning the network identifier in response to the selected client node.

7. (Currently Amended) A computer-readable storage medium readable by a programmable device, the programmable device being operably connected to a network wherein the medium assigns a network identifier to a client node, the client node having a memory and being operably connected to the programmable device, the medium comprising:

a first segment for determining a location of the client node by the programmable device in response to a request for a network identifier from the client node, the location being identified with respect to the programmable device;

a second segment for assigning the network identifier by the programmable device to the client node in response to the determined location of the client node

a third segment for receiving a request for the network identifier;

a fourth segment for transmitting a toggle signal, the toggle signal having an amount of state transitions;

a fifth segment for storing the amount of state transitions <u>in the memory of the</u> <u>client node</u>; and,

a sixth segment for identifying the client node having the default identifier and the amount of state transitions <u>including a request segment for transmitting a request to</u> <u>receive the amount of state transitions stored in the memory of the client node and, a</u> <u>comparison segment for comparing the amount of state transitions stored in the</u> <u>memory of the client node with the toggle signal wherein the network identifier is</u> <u>transmitted to the client node in response to the comparison</u>.

8. - 12 (Canceled)

13. (Currently Amended) A network comprising a server node and a plurality of operably connected client nodes wherein a permanent identifier is assigned to each client node of the plurality of client nodes in response to a location of each client node with respect to the server node, the network comprising:

the server node having an address input and an address output;

each of the plurality of operably connected client nodes having an address input and an address output, the address input and the address output being operably connected to a microprocessor in the network client node;

a communication bus being operably connected to the server node and each of the one or more client nodes;

an address bus being operably connected the server node and each of the plurality of client nodes, the address bus being connected between the output address of the server node and the input address of the nearest client node, the output address of the nearest client node being connected to the input address of the next nearest client node, wherein each subsequent operably attached client node is similarly connected to the network; and,

a network identifier being assigned to each client node of the plurality of client nodes by the server node, the network identifier of each client node being assigned a unique value in response to the location of each respective client node to the server

node, the location of each client node being determined in part by a toggle signal having a number of state transitions transmitted by the server node <u>wherein the server is configured to receive the amount of state transitions stored in the memory of the client node in response to a request transmitted by the server, compare the amount of state transitions stored in the memory of the client node with the toggle signal and transmit the network identifier to the client node in response to the comparison.</u>

14. (Original) The communication network of Claim 13 wherein at least one of the client nodes is a placeholder node for reserving a network identifier for the position occupied by the placeholder node.

15. (Previously Presented) The communication network of Claim 13 wherein the communication bus is CANOpen.

16. (Previously Presented) The communication network of Claim 13 wherein the client node is an output module.

17. (Currently Amended) A method for assigning a network identifier to a plurality of client nodes in a network communication system comprising the steps of:

    providing a network adapter having an address output serially connected to a plurality of client nodes, each client node having an address input and an address output, wherein the address output of the network adapter is connected to the address input of a nearest adjacent client node of the plurality of client nodes and the address output of the nearest adjacent client node is connected to the address input of the next nearest adjacent client node of the plurality of client nodes ;

    initializing each of the plurality of client nodes with a default identifier;

    transmitting a toggle signal having a predetermined number of active-inactive transitions by the network adapter;

    storing the number of active-inactive transitions by a client node of the plurality of client nodes having a default identifier in a memory of the client node;

    transmitting a signal to obtain the number of active-inactive transitions from the client node;

comparing the amount of active-inactive transitions from the client node with the
toggle signal wherein the network identifier is transmitted to the client node in response
to the comparison; and,

assigning each of the plurality of client nodes a unique network identifier by the
network adapter.

18. (Previously Presented) The method of claim 17 wherein the step of assigning each
of the plurality of client nodes a unique network identifier by the network adapter occurs
during power-up of the communication network system.

19. (Previously Presented) The method of claim 17 wherein the step of assigning each
of the plurality of client nodes a unique network identifier by the network adapter occurs
during a hot-swap of one of the plurality of client nodes of the communication network
system.

20. (Previously Presented) The method of claim 17 wherein the step of assigning each
of the plurality of client nodes a unique network identifier by the network adapter is
initiated by the network adapter.

21. (Previously Presented) The method of claim 17 further comprises the steps of:

broadcasting a request for a network identifier by one of the plurality of client
nodes.

22. (Previously Presented) The method of claim 17 further comprising the steps of:

receiving the toggle signal by the nearest one of the client nodes to the network
adapter having a default address on its address input;

determining a location of the nearest one of the client nodes of the plurality of
client nodes; and,

assigning the unique network identifier to the nearest one of the client nodes by
the network adapter based on the location of the client node.

23. (Previously Presented) The method of claim 17 wherein the network adapter is a
server node.

24. (Previously Presented) The method of claim 17 wherein the network adapter is a
field bus connector.

Allowable Subject Matter

Claims 1-4-7, 13-24 are allowed.

The following is the Examiner's statement of reasons for allowance:

The provisions in the Claims reciting A method of assigning a network identifier

to a client node comprising --

determining a location of the client node, the location being identified with respect

to the server; the determining a location of the client node including:

receiving a request for the network identifier from the client node,

transmitting a toggle signal from the server, the toggle signal having an

amount of state transitions,

storing the amount of state transitions in the memory of the client node,

identifying the client node having the default identifier and the amount of

state transitions by transmitting a request by the server to receive the amount of state

transitions stored in the memory of the client node and, comparing the amount of state

transitions stored in the memory of the client node with the toggle signal wherein the

network identifier is transmitted to the client node in response to the comparison; and,

assigning the network identifier to the client node by the server to the client node

in response to the determined location of the client node.

-- wherein aforementioned features are combined into one embodiment, is not

fairly taught by the prior art.

More specifically, the Applicant's claimed embodiments, unlike any of the cited

art, allows the client node, upon request by the server, to provide the amount of toggles

(previously transmitted by the server and stored by the client node) back to the server,

as indicated in Applicant Specifications Paragraph 4, and Figure 4.   Furthermore, the

Applicant's claimed embodiments, unlike any of the cited art, disclose the <u>amount of</u>

<u>state transitions as representative of the inactive-active transitions of the client input</u>

<u>address pin as toggled by the server</u>, as indicated in Applicant Specifications, Page 4

Paragraph 4 and Page 7 Lines 10-15.

Krivoshein disclosed sensing a device that is connected to the control system but

not included in the control configuration definition. However Krivoshein did not disclose

sending an amount of state transitions to be stored by the client node, wherein the client

node stores the amount of state transitions, and responds with said amount upon

request by the server.

Lorenz disclosed a method of address assignment for nodes on a bus system

configuration, but did not disclose sending an amount of state transitions to be stored by

the client node, wherein the client node stores the amount of state transitions, and

responds with said amount upon request by the server. While Lorenz disclosed sending

a preamble signal, Lorenz did not disclose an <u>amount of state transitions as</u>

<u>representative of the inactive-active transitions of the client input address pin as toggled</u>

<u>by the server.</u>

Farsi disclosed a CANopen protocol used for communications with Fieldbus

devices but did not disclose sending an amount of state transitions to be stored by the

client node, wherein the client node stores the amount of state transitions, and responds

with said amount upon request by the server.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."
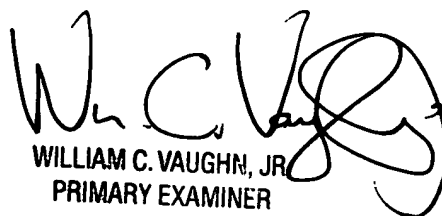
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Bengzon whose telephone number is (571) 272-3944. The examiner can normally be reached on Mon. thru Fri. 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on (571)272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gcb

WILLIAM C. VAUGHN, JR
PRIMARY EXAMINER